

**DECLARATION FOR UTILITY OR  
DESIGN  
PATENT APPLICATION  
(37 CFR 1.63)**



Declaration  
Submitted  
With Initial  
Filing

OR



Declaration  
Submitted after Initial  
Filing (surcharge  
(37 CFR 1.16 (e))  
required)

Attorney Docket Number

BP3134CIP

First Named Inventor

Ba-Zhong Shen, Ph.D.

*COMPLETE IF KNOWN*

Application Number

Filing Date

Art Unit

Examiner Name

**I hereby declare that:**

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

LDPC (Low Density Parity Check) coded modulation hybrid decoding using non-Gray code maps for improved performance

*(Title of the Invention)*

the specification of which



is attached hereto

OR



was filed on (MM/DD/YYYY)

as United States Application Number or PCT International

Application Number

and was amended on (MM/DD/YYYY)

(if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				Yes	No
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

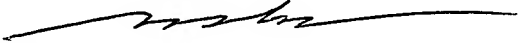
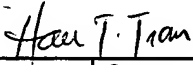
☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

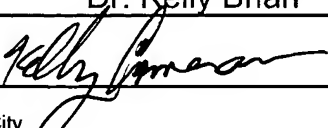
This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

## DECLARATION — Utility or Design Patent Application

Direct all correspondence to: <input checked="" type="checkbox"/> Customer Number: <b>34399</b>		OR <input checked="" type="checkbox"/> Correspondence address below	
Name <b>Garlick Harrison &amp; Markison LLP</b>			
Address <b>P.O. Box 160727</b>			
City <b>Austin</b>		State <b>Texas</b>	ZIP <b>78716-0727</b>
Country <b>USA</b>	Telephone <b>(512) 825-1145</b>	Fax <b>(512) 394-0054</b>	
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.			
NAME OF SOLE OR FIRST INVENTOR:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle [if any]) <b>Ba-Zhong</b>		Family Name or Surname <b>Shen, Ph.D.</b>	
Inventor's Signature 		Date <b>3/8/04</b>	
Residence: City Irvine	State CA	Country USA	Citizenship USA
Mailing Address 22 Wyoming			
City Irvine	State CA	ZIP 92606	Country USA
NAME OF SECOND INVENTOR:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle [if any]) <b>Hau Thien</b>		Family Name or Surname <b>Tran</b>	
Inventor's Signature 		Date <b>3/8/04</b>	
Residence: City Irvine	State CA	Country USA	Citizenship USA
Mailing Address 19 Purple Sage			
City Irvine	State CA	ZIP 92612	Country USA
<input checked="" type="checkbox"/> Additional inventors or a legal representative are being named on the <u>1</u> supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.			

**DECLARATION****ADDITIONAL INVENTOR(S)**  
Supplemental SheetPage 1 of 1

<b>Name of Additional Joint Inventor, if any:</b>		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any))		Family Name or Surname	
Dr. Kelly Brian		Cameron	
Inventor's Signature 		Date 3/5/04	
Irvine Residence: City	CA State	USA Country	USA Citizenship
4171 Blackfin Mailing Address			
Mailing Address			
Irvine City	CA State	92620 Zip	USA Country
<b>Name of Additional Joint Inventor, if any:</b>		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any))		Family Name or Surname	
Inventor's Signature		Date	
Residence: City	State	Country	Citizenship
Mailing Address			
Mailing Address			
City	State	Zip	Country
<b>Name of Additional Joint Inventor, if any:</b>		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any))		Family Name or Surname	
Inventor's Signature		Date	
Residence: City	State	Country	Citizenship
Mailing Address			
Mailing Address			
City	State	Zip	Country

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If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.



BROADCOM CORPORATION  
16215 Alton Parkway  
Irvine, California 92618

Phone: 949-450-8700  
Fax: 949-450-8710

May 20, 2003

To whom it may concern:

I, Henry Samueli, hereby authorize Dee Henderson, Intellectual Property Portfolio Manager, to execute documents relating to US and foreign patent and trademark matters on behalf of Broadcom Corporation and/or its subsidiaries.

A handwritten signature in cursive script, appearing to read 'H Samueli', is written over a horizontal line.

Henry Samueli, Ph.D.  
Chief Technical Officer and Co-Chairman

**POWER OF ATTORNEY FROM ASSIGNEE**

Broadcom Corporation, a California corporation having a principal place of business at 16215 Alton Parkway, Irvine, California 92618-7013, is assignee of the entire right, title and interest for the United States of America (as defined in 35 U.S.C. § 100), by reason of an Assignment to the Assignee executed on \_\_\_\_\_ of an invention known as

**LDPC (Low Density Parity Check) coded modulation hybrid decoding using non-Gray code maps for improved performance (Attorney Docket No. BP3134CIP)**

which is disclosed and claimed in a patent application of the same title by the inventor(s)

**Ba-Zhong Shen, Ph.D., Hau Thien Tran, and Dr. Kelly Brian Cameron**

(said application filed on \_\_\_\_\_ at the U.S. Patent and Trademark Office, having Application Number \_\_\_\_\_).

The Assignee hereby appoints the U.S. attorneys/agents associated with Garlick, Harrison & Markison, LLP (USPTO CN 34399) to prosecute this application and any continuation, divisional, continuation-in-part, or reissue application thereof, and to transact all business in the U.S. Patent and Trademark Office connected therewith, such attorneys/agents currently being:

Bruce E. Garlick	Reg. No. 36,520
James A. Harrison	Reg. No. 40,401
Timothy W. Markison	Reg. No. 33,534
Shayne X. Short, Ph.D.	Reg. No. 45,105
William W. Kidd	Reg. No. 31,772
Robert A. McLauchlan III	Reg. No. 44,924

The Assignee hereby grants said attorneys/agents the power to insert on this Power of Attorney any further identification that may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office.

Please send correspondence to: GARLICK HARRISON & MARKISON LLP  
P.O. BOX 160727  
AUSTIN, TEXAS 78716-0727.

Please direct phone calls to: Shayne X. Short, Ph.D. (512) 825-1145.

FOR: Broadcom Corporation

SIGNATURE: \_\_\_\_\_

BY: \_\_\_\_\_

**Dee Henderson**

Manager, Intellectual Property Portfolio

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

3-16-04

**Certificate Under 37 CFR 3.73(b)**

Applicants: Ba-Zhong Shen, Ph.D.

Hau Thien Tran

Dr. Kelly Brian Cameron

Entitled: **LDPC (LOW DENSITY PARITY CHECK) CODED MODULATION HYBRID DECODING USING NON-GRAY CODE MAPS FOR IMPROVED PERFORMANCE**

Application No.

Filing Date:

**Broadcom Corporation**

(Name of Assignee)

**a, California Corporation**

(Type of Assignee)

states that it is :

1. ☒ the assignee of the entire right, title, and interest; or  
 2. ☐ an assignee of an undivided part interest

in the patent application/patent identified above by virtue of either :

- A. ☒ An Assignment for the inventor(s) of the patent application/patent identified above. The assignment was recorded in the Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

OR

- B. ☐ A chain of title for the inventor(s) of the patent application/patent identified above to the current assignee as shown below:

1. From \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.
2. From \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.
3. From \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

- ☐ Additional documents in the chain of title are listed on a supplemental sheet.  
☒ Copies of assignments or other documents in the chain of title are attached.

[NOTE: A separate copy (i.e., the original assignment document or a true copy of the original document) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the PTO. See MPEP 302-302.8]

The undersigned (whose title is supplied below) is empowered to act on behalf of the assignee.

Date: 3-16-04Name: Dee HendersonTitle: Manager, Intellectual Property PortfolioSignature: 